Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

CONDITIONAL MAJOR DRAFT PERMIT NO. F-04-019
DAI, LLC
#1 DURO WAY, WALTON, KENTUCKY
March 24, 2005
ELAHE HOUSHMAND , REVIEWER
Plant I.D. # 21-015-00145
Application Log # 56395

SOURCE DESCRIPTION:
DAI, LLC will manufacture dispersed printing inks at #1 Duro Way, Walton, Boone County, Kentucky for the Duro facility and other customers. This facility will include one 1,000-gallon mixing tank, two 300-gallon tanks and one mixer. DAI will produce water-based varnishes, extenders, and overprints. The source is located in an area that will be designated as an 8-hour ozone non-attainment area effective June 15, 2004.

Raw materials are added to a tank and mixed using a shaft-mounted impeller for a pre-determined time period which is controlled by batch recipes. Following the raw material additions, the hatch is closed and remains closed during the mixing operation. The only opening in the tank during mixing is the mixer shaft opening, which is approximately 3-4 inches in diameter. A sample of the mixed product is taken and analyzed to determine whether the ink meets the desired characteristics (color, shear, viscosity, etc.). If the ink is within specifications, it is filtered and drummed for shipment. If the ink is not within specifications, additions are made and the ink is re-mixed and re-sampled until analysis shows it to be with specifications.

The source has submitted an application for issuance of a permit for Construction / Operation of three (3) mixing tanks (EP01). DAI has requested that enforceable limits be placed on their actual VOC and HAP emissions so that the company can be considered a conditional major source for VOC and HAP.

Type of control and efficiency
EP01 present at this source has no control.

Emission factors and their source
Based on a comprehensive material balance around the mixing operation, American Inks & Coatings Corporation (AIC), a sister company to DAI, LLC developed volatile organic compound (VOC) loss factors for solvent- and water-based batches. The total product loss for each batch was calculated by subtracting the weight of accountable product from adjusted batch weight. It was assumed that all product losses are evaporative VOC losses. A percent product loss factor was calculated for each batch, by dividing the product loss factor by the total adjusted batch size. A number of batches were evaluated and the results were averaged to produce one loss factor for solvent-based inks and another loss factor for water based inks.

DAI will only produce water-based inks that are based on similar product mixes therefore, it utilizes the same VOC emission factor for each water-based batch of ink. Furthermore, DAI

conservatively assumes all HAPs are VOCs and calculates HAP emission factor by multiplying VOC emission factor by fraction of HAP content % over VOC content %.

Applicable regulations

401 KAR 63:020. Potentially hazardous matter or toxic substances applies to all toxic air emissions.

PERIODIC MONITORING:

The mixing batch processes are expected to be in compliance if they are operated and maintained in accordance with good air pollution practices.

EMISSION AND OPERATING CAPS DESCRIPTION:

401 KAR 63:020 Emission Limitations,

The source is in compliance with 401 KAR 63:020. This compliance determination is based on the emission rates of HAPs given in the application submitted by the source. If the source alters process rates, material formulations, or any other factor that would result in an increase of HAP emissions or the addition of HAP emissions not previously evaluated by the Division, the source shall submit the appropriate application forms pursuant to 401 KAR 52:030, along with modeling to show that the facility will remain in compliance with 401 KAR 63:020.

Conditional Major Emission Limitations,

VOC Conditional Major Limitation, Source-wide emissions of Volatile Organic Compound (VOC) shall not exceed twenty (20) tons during any consecutive twelve (12) month period.

HAP Conditional Major Limitation, Glycol Ether compounds are treated as if they were all put together as one HAP, therefore source-wide emissions of all Glycol Ether compounds can not exceed the Single HAP limit of nine (9) tons during any consecutive twelve (12) month period. Source-wide emissions of combined HAPs shall not exceed twenty (20) tons per year.

Monthly records, which demonstrate compliance with these limitations, shall be maintained and total VOC/HAP emissions shall be reported semiannually.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or record keeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.